

ABSTRACT OF THE DISCLOSURE

A design of a tire can be facilitated. An optimization apparatus 30 inputs known design parameters of the shape, structure, and pattern of a tire, and performances thereof by an experimental data input unit 40 and learns, as a conversion system of a neural network, a correlation between design parameters of the shape, structure, and pattern of the tire, and performances thereof. Ranges which constrain performances of the tire and design parameters of the shape, structure, and pattern of the tire, which are to be optimized, are inputted in an optimization item input unit 42, and the performances of the tire are predicted in an optimization calculation unit 34 from the design parameters of the shape, structure, and pattern of the tire by using the optimization item and models of the calculation unit 32, and an objective function is optimized until the objective function which is the performances of the tire is converged. The optimized design parameters of the shape, structure, and pattern of the tire are outputted from an optimization result output unit 44.

09269972-040899